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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/048,019

06/03/2002

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EXAMINER

ST CLAIR, ANDREW D

ART UNIT

PAPER NUMBER

3749

MAIL DATE

DELIVERY MODE

08/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/048,019	Applicant(s) OGLESBY, JOHN PAUL	
	Examiner ANDREW ST CLAIR	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-46 and 48-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-46, 48-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/3/2002, 1/28/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 48, 29-41, and 43-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Sim (US 5,154,322).

With respect to claim 48, Sim discloses a heating device comprising: a main housing defining a combustion chamber 66 within which fuel gas is converted to heat for heating the main housing, an exhaust gas port (defined by elements 68,69) from the combustion chamber for exhausting burnt gases therefrom, a working body member (70, 71, 77) of heat conductive material in heat conducting engagement with the main housing for receiving heat therefrom (col. 9, ln. 3-4; “The hot exhaust gases from combustion heat the thin wall 70”), a passageway extending from the exhaust gas port to an exhaust gas outlet 73 past the working body member for accommodating exhaust gases from the exhaust gas port to the exhaust gas outlet for transferring heat from the exhaust gases to the working body member, and a heat exchange means comprising a plurality of spaced apart heat exchange fins extending from the working body member into the passageway for transferring heat from the exhaust gases to the working body member (elements 68 and 69 are considered fins spaced apart and extending from the working body toward the combustion chamber, in that they are located in the proximity of the working body and sequentially move farther toward the combustion chamber) for reducing the

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temperature at which the exhaust gases exit from the heating device through the exhaust gas outlet (col. 9, ln. 6-8; “The walls 68 and baffle 69 reduce the temperature of the exhaust gases leaving the monoblock casting”), the heat exchange fins defining a circuitous exhaust gas passageway through which the exhaust gases pass between the exhaust gas port and the exhaust gas outlet.

With respect to claim 29, Sim further discloses the claimed subject matter in which the heat exchange fins extend from the working body member in a staggered formation for forming the circuitous exhaust gas passageway. (see fig. 9, fins 68 and 69 are considered to be staggered in that they are spaced sequentially outwardly).

With respect to claim 30, Sim further discloses the claimed subject matter in which the heat exchange fins are parallel or inclined to each other. (fig. 9 shows fins 68 and 69 parallel).

With respect to claim 31, Sim further discloses the claimed subject matter in which a cover 67 (see fig. 10) is provided around the working body member adjacent the heat exchange fins for defining with the working body member and the heat exchange fins, the exhaust gas passageway.

With respect to claim 32, Sim further discloses the claimed subject matter in which the heat exchange fins extend on respective opposite sides of the working body member for defining a pair of passageways extending one on each side of the working body member. (Fig. 9, fin 69 extends from the approximate left side to the approximate right side of the working body member, and is therefore considered to be “one on each side;” both fins 68 and 69 define a pair of passageways likewise extending from left to right.)

With respect to claim 33, Sim further discloses the claimed subject matter in which the respective passageways merge adjacent the exhaust gas port and adjacent the exhaust gas outlet. (The pair of passageways defined by fin 69 merge adjacent to outlet 73.)

With respect to claim 34, Sim further discloses the claimed subject matter in which the main housing is an elongated main housing defining an elongated combustion chamber extending from an upstream end to a downstream end, the exhaust gas port being located adjacent the downstream end, the heat exchange fins being located on the working body member adjacent the downstream end of the main housing. (Fig. 9, the right side is considered the upstream end and the left is considered the downstream end.)

With respect to claim 35, Sim further discloses the claimed subject matter in which the working body member extends longitudinally along the main housing from the upstream end to the downstream end thereof (see fig. 9), and a portion of the working body member extends in a downstream direction beyond the downstream end of the main housing, and the heat exchange fins are located adjacent the portion of the working body member extending downstream beyond the working body member. (see fig. 9 and 10).

With respect to claim 36, Sim further discloses the claimed subject matter in which the working body member defines an elongated heating chamber 71 extending between an upstream end and a downstream end for receiving and melting hot melt glue therein (col. 9, ln. 3-6; “glue feed passageway 71”), and a dispensing nozzle 77 extends from the working body member at the downstream end thereof communicating with the heating chamber for receiving and dispensing melted glue therefrom.

With respect to claim 37, Sim further discloses the claimed subject matter in which the heat exchange fins are located adjacent the dispensing nozzle. (see fig. 9)

With respect to claim 38, Sim further discloses the claimed subject matter in which the dispensing nozzle extends axially from the working body member relative to the heating chamber. (see fig. 9)

With respect to claim 39, Sim further discloses the claimed subject matter in which a glue receiving inlet is provided at the upstream end of the heating chamber for receiving glue into the heating chamber in an elongated stick form. (fig. 9 shows an inlet proximate to element 72, on the upstream end of the heating chamber).

With respect to claim 40, Sim further discloses the claimed subject matter in which the working body member is located relative to the main housing so that the heating chamber and the combustion chamber extend parallel to each other. (see fig. 9)

With respect to claim 41, Sim further discloses the claimed subject matter in which a fuel gas inlet 65 is located at the upstream end of the combustion chamber for receiving fuel gas for converting to heat in the combustion chamber.

With respect to claim 43, Sim further discloses the claimed subject matter in which the heat exchange fins are adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet to a temperature approximately similar to the temperature of the working body member. (col. 9, ln. 3-8; “The hot exhaust gases from combustion heat the thin wall 70 of a glue feed passageway...The walls 68 and baffle 69 reduce the temperature of the exhaust gases leaving the monoblock casting;” Sim discloses the exhaust gases in a heat exchange relationship with the working body member; it is considered inherent that the two temperatures are similar.)

With respect to claim 44, Sim further discloses the claimed subject matter in which the heat exchange fins are adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet to a temperature approaching the temperature of the working body member. (col. 9, ln. 3-8; “The hot exhaust gases from combustion heat the thin wall 70 of a glue feed passageway...The walls 68 and baffle 69 reduce the temperature of the exhaust gases leaving the monoblock casting;” Sim discloses the exhaust gases in a heat exchange relationship with the working body member; it is considered inherent that the two temperatures approach each other.)

With respect to claim 45, Sim further discloses the claimed subject matter in which the heat exchange fins are adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet to a temperature just slightly above the temperature of the working body member adjacent the heat exchange fins. (col. 9, ln. 3-8; “The hot exhaust gases from combustion heat the thin wall 70 of a glue feed passageway...The walls 68 and baffle 69 reduce the temperature of the exhaust gases leaving the monoblock casting;” Sim discloses the exhaust gases in a heat exchange relationship with the working body member; it is considered inherent that the exhaust temperature will be slightly above the temperature of the working body, given that no system can achieve absolute thermal efficiency.)

With respect to claim 49, Sim discloses the claimed subject matter in which the heat exchange fins extend transversely from the dispensing nozzle on respective opposite sides thereof in an upstream/downstream direction relative to the heating chamber. (see fig. 9).

With respect to claim 50, Sim discloses a glue gun comprising a main housing defining a combustion chamber 66 within which fuel gas is converted to heat for heating the main housing, an exhaust gas port (defined by elements 68, 69) from the combustion chamber for exhausting

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burnt gases therefrom, a working body member (70, 71, 77) of heat conductive material in heat conducting engagement with the main housing for receiving heat therefrom (col. 9, ln. 3-4; “The hot exhaust gases from combustion heat the thin wall 70”), the working body member defining an elongated heating chamber for receiving and melting hot melt glue therein, a dispensing nozzle 77 extending from the working body member communicating with the heating chamber for receiving and dispensing melted glue therefrom, a passageway extending from the exhaust gas port to an exhaust gas outlet 73 past the working body member for accommodating exhaust gases from the exhaust gas port to the exhaust gas outlet for transferring heat from the exhaust gases to the working body member, and a heat exchange means comprising a plurality of spaced apart heat exchange fins extending from the working body member into the passageway for transferring heat from the exhaust gases to the working body member (elements 68 and 69 are considered fins spaced apart and extending from the working body toward the combustion chamber, in that they are located in the proximity of the working body and sequentially move farther toward the combustion chamber) for reducing the temperature at which the exhaust gases exit from the heating device through the exhaust gas outlet (col. 9, ln. 6-8; “The walls 68 and baffle 69 reduce the temperature of the exhaust gases leaving the monoblock casting”), the heat exchange fins defining a circuitous exhaust gas passageway through which the exhaust gases pass between the exhaust gas port and the exhaust gas outlet.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sim (US 5,154,322).

With respect to claim 46, Sim further discloses the claimed subject matter characterized in that the heat exchange fins are adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet. (col. 9, ln. 3-8; “The hot exhaust gases from combustion heat the thin wall 70 of a glue feed passageway...The walls 68 and baffle 69 reduce the temperature of the exhaust gases leaving the monoblock casting.”) Sim also discloses the desirability of exchanging the heat between the exhaust and the working body so that the temperature of the exhaust is reduced. (col. 4, ln. 53-58; “Thus, the baffles and other portions of the combustion chamber, and preferably also a wall of the passage defining means, act as a heat absorbers to absorb the heat of the flame and the exhaust gases and transfer it to the remainder of the passage defining means and any material therein.”) Sim does not disclose reducing the temperature of the exhaust exiting the exhaust gas outlet to a temperature not greater than 50°C above the temperature of the working body member adjacent the heat exchange fins. The difference in temperature between

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the working body and the exiting exhaust will be primarily a function of the material used to form the working body and the length of the exhaust passageway; given a long enough exhaust passageway, the exhaust temperature may be as low as the room temperature. It is considered within the purview of one skilled in the art at the time the invention was made to design a glue gun capable of performing the functional limitation claimed by simply varying the length of the exhaust passageway; . It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the glue gun of Sim with sufficient structure such that the exiting exhaust is within 50°C of the working body because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp with a reasonable expectation of success. (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.” *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, (2007)).

6. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sim (US 5,154,322) in view of Oglesby et al. (5,799,648).

With respect to claim 42, Sim further discloses the claimed subject matter except a gas catalytic combustion element is located in the combustion chamber for converting fuel gas to heat. Oglesby et al. disclose a heating device usable as a glue gun comprising a catalytic combustion element 12 located in the combustion chamber. (Abstract; “A gas catalytic combustion element (12) is located in the combustion chamber (10);” col. 1, ln. 6-8; “The present invention relates to a gas powered heating device, for example, a soldering iron, a glue

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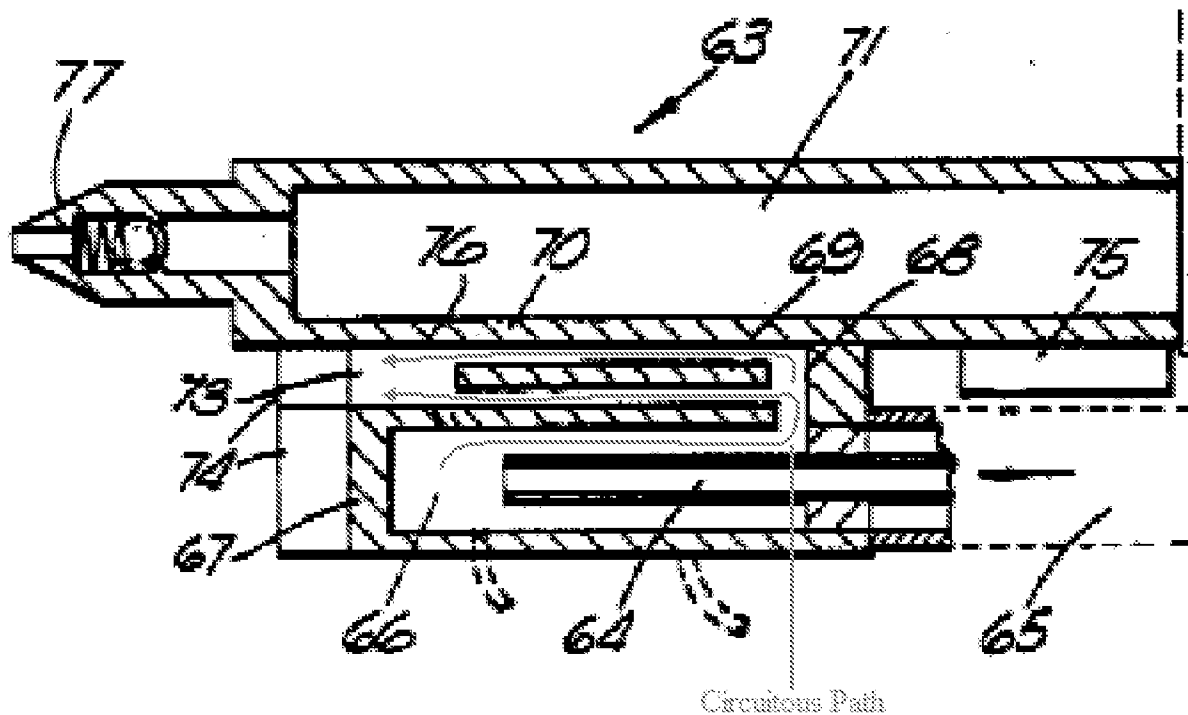
gun...”) It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the glue gun of Sim with the combustion the device of Oglesby et al. because all of the claimed elements were known in the prior art and one skilled in the art could have combined prior art elements according to known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, (2007)).

Response to Arguments

7. In re claims 29-46 and 48-50, Applicant’s arguments are considered and responded to below.

Applicants’ makes essentially two arguments: (1) the Sim reference does not disclose a circuitous exhaust path, and (2) the Sim reference does not disclose heat exchange fins extending from the working body into the passageway.

With respect to the first argument, Applicant points out that one definition of the word “circuitous” is “a circular or winding course.” The modified figure of Sim below illustrates the path traveled by exhaust gases between the combustion chamber 66 and exhaust outlet 73, as understood by Examiner. This exhaust path appears to be winding, or circuitous.



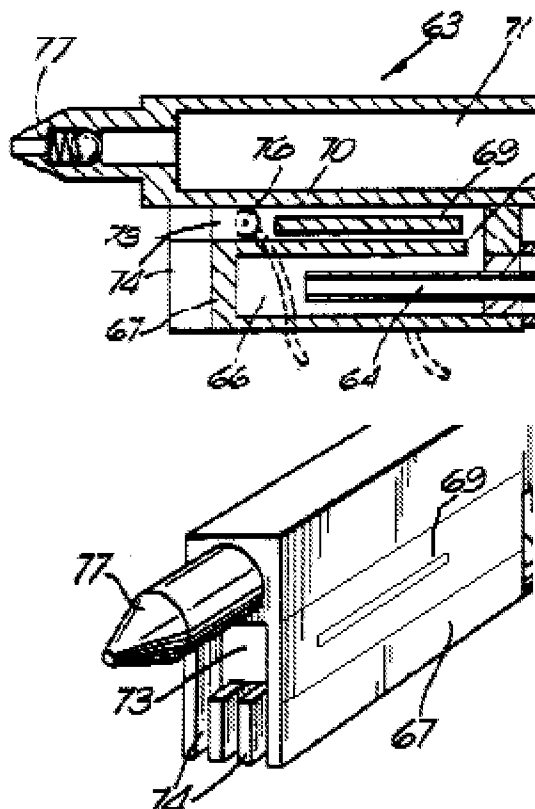
Modified figure of Sim (US 5,154,322)

With respect to the second argument, Examiner submits that Applicant has taken an unduly narrow interpretation of the word "from," contending the word to be roughly synonymous with "contacting." While admittedly the fins of Sim do not contact the working body, they can be viewed as extending from the working body in that they start in very close proximity to the working body and extend away from it. In other words, taking the fins sequentially, the upper side of fin 69 is directly next to the working body, the fin 69 extends away from the working body in the direction of its width, continuing in the same direct the next fin 68 extends away from the working body in the direction of its width as well.

Moreover, even if the word "from" does necessitate contact, it would appear that the Sim reference also satisfies this claim limitation. Considering Figures 9 and 10 of Sim together, it seems that Fin 69 necessarily contacts sidewall 67 which is a downward extension of the

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working body. Fin 68 would also necessarily contact the sidewall 67 in order to form the “labyrinth” disclosed. Col. 9, ln. 1-17. If fin 68 did not contact the sidewall 67, the combustion gases would escape directly out of exhaust outlet 73 and little heat to the working body. Thus fins 68 and 69 appear to contact and extend away from the working body via the sidewall 67. See the modified figure below.



Modified figure of Sim (US 5,154,322)

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW ST CLAIR whose telephone number is (571)270-3513. The examiner can normally be reached on Monday - Friday, 8 a.m. - 6 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew St.Clair/
Examiner, Art Unit 3749

/Steven B. McAllister/
Supervisory Patent Examiner, Art Unit 3749